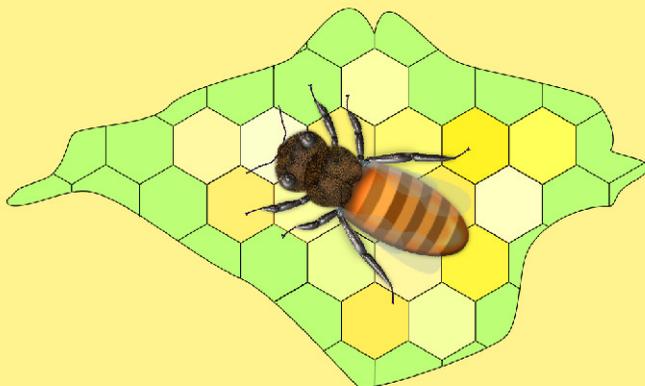


The
Wight Bee



January 2014

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Issue 108

Perfect hexagonal tubes in a packed array. Bees are hard-wired to lay them down, but how does an insect know enough geometry to lay down a precise hexagon? It doesn't. It's programmed to chew up wax and spit it out while turning on its axis, and that generates a circle. Put a bunch of bees on the same surface, chewing side-by-side, and the circles abut against each other - deform each other into hexagons, which just happen to be more efficient for close packing anyway. **Peter Watts, Blindsight**

The Journal of
The Isle of Wight Beekeepers Association
www.iwbka.org.uk

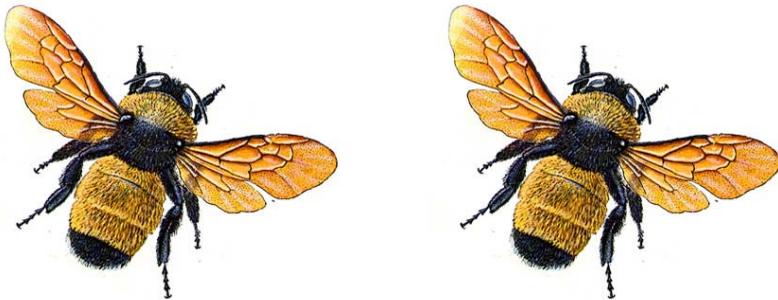
This winter has been a torrid time for beekeepers all over the country, with high winds, fallen trees and floods searching out the most well-protected apiaries, and the Island has not escaped these crises. The floods at the allotments in Ryde claimed hives belonging to one of our members, and later in this issue there will be 'storm damage' reports from those who have been on the receiving end of the extreme weather.

My own hives have so far escaped the weather although I did have to move a few as an emergency precaution when overhanging branches and falling leylandii started behaving ominously in high winds.

The bees come out when the temperature permits, but thus far despite catkins and snowdrops nearby I haven't seen pollen being collected. Also there has been some mite drop. Mary Case has reported the same, on January 7 she wrote, "I am saddened to find there are still a few mites falling in the hives that I am monitoring...Some hives are brood rearing as there's evidence of cappings on the inserts, along with the cappings from stores". On the plus side however Mary has been monitoring a hive on a large scale and it had only lost 5lbs since October.

Thank you to the seven people who helped fill these pages. Part two of the series on microscopy by Ian King is enclosed. I can now add wings to my knowledge of legs.

Gillian Belben



Recipes with honey

Atholl Brose

A recipe for Burn's Night, with apologies for it appearing late, and much closer to Chinese New Year.

50 g medium or fine oatmeal
50 g runny honey
50 ml Scotch whisky
250 ml cream, stiffly whipped

Spread oats on a baking sheet and toast lightly under a grill, taking care not to burn it.

When cool, rub between palms to incorporate toasted oats.

Stir honey and whisky into the cream, then fold in 20g of the oatmeal.

Spoon into four glasses, sprinkle with remaining oatmeal and chill before serving.



From 'The Prophet'

Kahlil Gibran

And now you ask in your heart,
"How shall we distinguish that which is good in pleasure
from that which is not good?"

Go to your fields and your gardens, and you shall learn that
it is the pleasure of the bee to gather honey of the flower,
But it is also the pleasure of the flower to yield its honey
to the bee.

For to the bee a flower is a fountain of life,
And to the flower a bee is a messenger of love,
And to both, bee and flower, the giving and the receiving of
pleasure is a need and an ecstasy.

People of Orphalese, be in your pleasures like the flowers
and the bees.

Storm report from Chris McClennan

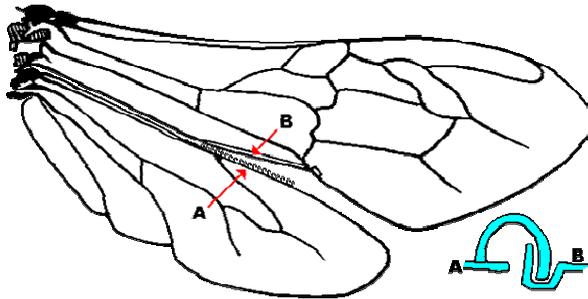
I put 6 hives in a new location at the edge of a field between Ryde and Brading and on the onset of winter I tied the hives on their stands with strong rope.

Four of the hives at the end of the row blew over on Christmas Eve, as each hive was tied together, they each went over as a unit so I think the damage was minimal as the hive didn't split open and the bees weren't exposed to the weather. I have since erected a wind break mesh fence in front of the hives so haven't had a repeat problem. I now get a daily phone call during the stormy weather from the land owner to confirm the hives stayed upright. Now waiting for the spring to make sure the queens are still alive.

Micro Bee Study Group
Part 2— Wings and associated muscles

Veins stiffen the thin membrane of the wings; these veins in the prepupal stage are formed as trachea (breathing tubes), which disappear as the wing becomes fully formed, but their positions are marked by veins. This wing venation (vein pattern) is used as a basis for bee selection by BIBBA who are active in bee selection and breeding.

Fig. 1

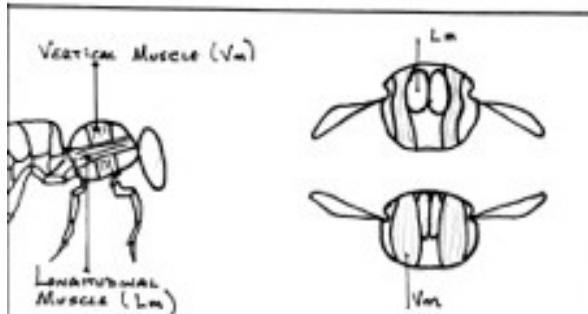


The forewing and hind wing are coupled for flight automatically by a row of hamuli (wing hooks) on the forward edge of the hind wing, into a fold on the trailing edge of the forewing (A and B). There are ~ 21 of these hooks holding the two wings together over a length of ~1.5mm – and in flight the wing beat is ~230 times per second, that's a lot of stress and strain on 21 small hooks.

Fig: 2 **Hamuli** (Wing Hooks) on the leading edge of the hind wing



Fig. 3.
 X Section THRU THORAX SHOWING INDIRECT FLIGHT MUSCLES



Wing Muscles

The wings are moved by two systems of flight muscles in the thorax:

The small direct flight muscles furl and unfurl the wings – these muscles also adjust the cant of the wings with every up and down beat of the wing (These muscles are located outboard of the vertical flight muscles – not shown for clarity) remember wing beat is ~230 times per second – that’s a lot of canting per second.

The large indirect flight muscles that almost fill the interior of the thorax operate (beat) the wings in flight, they move only the forewings, the hind wings are trailed passively behind; connected by hamuli (hooks) to the trailing edge of the forewing.

To allow the wings to move the thorax is widened and lengthened then narrowed and shortened by pulling on either the longitudinal or vertical muscles.

(1. Lm) Longitudinal muscles pull on the forward and aft ends of the thorax, causing the wings to lower; the thorax narrows and shortens, and stretches the vertical muscles

(2. Vm) Vertical muscles pull on the roof of the thorax, causing the wings to rise. The thorax widens and lengthens, and stretches the longitudinal muscles

You can visually see this happening by holding a dead bee with a finger placed above and below the thorax, pressure on the thorax will cause the wings to rise, and will fall when the pressure is released.

Pre-Flight warm up (Thermoregulation)

The interior of the cluster holding the queen is $\sim 34^{\circ}\text{C}$, the temperature of bees outside this cluster can be as low as $20^{\circ} - 22^{\circ}$, (Note: researchers often cool bees down to 5° and lower to allow gentle manipulations – they can then warm themselves back up once back with the colony)

A bee has to be at $\sim 34^{\circ}\text{C}$ to enable it to fly – the same temperature as the cluster, it can simply warm itself up by quickly contracting its longitudinal and vertical indirect flight muscles alternatively, as the wings are furled this produces only heat.

Heat loss can also occur whilst out foraging, optimal foraging temperature is $22-25^{\circ}\text{C}$, as the indirect flight muscles produce heat whilst flying a nominal heat of 35°C is maintained. Should the outside air temperature (OAT) drop below 20°C the bee can quickly generate heat (whilst stationary) with wings furled and contracting the indirect flight muscles. Should the outside air temperature rise above $25-30^{\circ}\text{C}$ a form of evaporative cooling is used; heat generated in the thorax is dissipated into the head; the bee regurgitates a droplet of hot internal fluid, a honeycrop droplet. The fluid is held on the tongue, which immediately cools the head. At temperatures below $7-10^{\circ}\text{C}$ bees become immobile and above 38°C the activity slows. For very short periods bees can tolerate temperatures up to 50°C .

Flight Muscle Usage:

- 1 Warming the body up prior to flight.
- 2 Flight.
- 3 Communal hive heating or cooling – fanning to regulate brood at $\sim 34^{\circ}\text{C}$.
- 4 Fanning for pheromone dispersal.
- 5 Buzzing wings during waggle dance communication.

Island beekeeper interview

Ruth Green



When do you first remember being aware of bees and honey?

About 25 years ago a very good friend of mine started keeping bees in Dorset. Whenever I visited him I used to pop a suit on and help out. He would talk endlessly of the trials and tribulations of his beekeeping and I'm sure my eyes glazed over, just as many of my friends do now when I get started on the subject of bees!

What tempted you into beekeeping at first?

We moved to the Island 4 years ago and I gave up nursing. The thought of 'not working' terrified me so my wonderful colleagues bought me a place on a basic beekeeping course believing that it would keep me out of mischief!

Did you have an easy beginning with lots of help or did you struggle?

We were refurbishing our farmhouse kitchen and I traded an old stove for 6 chickens and a beehive. The timing could not have been better as Quarr teaching apiary opened its doors just as my beginner's course ended, providing me with the lifeline and network that I needed. Every year has been completely different and just as I feel that I'm doing something right a new challenge arises. I think that's the best thing about beekeeping, you have to keep your wits about you and never sit back on your laurels.

What hives do you use and how did you choose which format?

I have nationals and chose them because they are most commonly used. I do like them but if I were starting again I would certainly use deep brood boxes and may swap to them this year.

How many colonies do you hope to start this next Spring with, and what sort of a journey has it been to build them up?

Currently I have 2 colonies tucking into fondant as we speak!

I went up to 4 last year, carrying out a split at the first apiary meeting as many of you may remember. All seemed to be thriving and strong until in June two of the colonies suffered with chronic bee paralysis virus. Carrying out a routine inspection, I found a dying queen on top of a pile of dead workers on the ground in front of the hive and yes it was the one that was pictured at the honey show this year! The dead bees were scooped up into a box as I wondered if poisoning had killed them, then I called the bee inspector. In two hives the bees were shaky on the frames and many had an open winged stance which the bee inspector referred to as k-winged. Outside, bees were not making it back onto the landing board after a flight and simply crawled around on the ground many of which had black shiny bodies. The brood looked healthy and normal so the advice was to feed the hives and see what happened in a couple of weeks. One hive fully recovered whilst the other remained queenless despite my efforts. I had a second hive succumb to chalk brood and chilled brood which was disappointing. Interestingly this was my only hive on a short stand so it may have been prone to more dampness than the other hives.

What has been your happiest discovery along the way?

There is life after nursing! I have made some wonderful new chums and my goodness the honey is delicious!

Do you have any 'rules' that you observe every year leading to recommendations you could pass on?

If you have any health issues with your hives don't hesitate to speak to the bee inspector. Our bee inspector is delightful, so helpful and so enthusiastic. She is willing to share all her knowledge and experience without making anyone feel daft!

I have a memory like a sieve so scrupulous record keeping is essential especially for planning the return visits! And I always say I'm going to get ahead with all the cleaning and hive building because it does all mount up so quickly – I never do!

What has been your worst beekeeping mistake?

I like to call this a near miss rather than a mistake - discovering that my honey bucket was full to the brim just in time. NEVER let a 5 year old persuade you to be a jedi knight even for just 5 minutes while emptying the extractor!!

How has beekeeping fitted in with the rest of your life?

We moved here to simplify our lives but with one thing and another it seems have been the reverse. Managing the farm, juggling the school run, starting a small business, keeping 50 hens and ducks all sounds idyllic but our feet don't touch the ground and I've never used the car so much in my life! Therefore the time spent beekeeping slows me down in a most therapeutic way, whether its opening a hive on a baking hot summers day or putting frames together in a freezing cold shed. Nothing can be or even should be rushed as it always ends up annoying the bees or me! I love the sound and smell of a hive. I love the anticipation of honey. I love learning something new every time I open a hive. I love seeing the pure joy on my sons face when we find the queen (you can probably imagine the relief on my face).

What other aspects of your life are important and enjoyable to you?

Family and friends.

Being in tune with the seasons.

What is the most surprising thing that others might like to know about you?

I have resuscitated many people as part of my job as a nurse, and for several years was a resuscitation officer at Southampton General Hospital. My nickname was Thumper!

Shame I couldn't resuscitate my queen....

What are your beekeeping hopes and plans for the future?

Simply to continue to enjoy the experience and to learn something new every day.



Storm report from Ian King

One blown over, it was ratchet strapped together so hopefully all will be well. They showed their appreciation of being uprighted in their usual fashion (or should that be righted-up).

Landmarks and events of the Isle Of Wight—48

The Blue Jenny



This small wooden effigy stands in a recess on a building in Crocker Street, Newport. It marks the site of premises of the Newport Blue School Foundation, a charity established in 1761. The school which was originally in Lugley Street was designed to provide education and training for girls, most of whom came from poor families. The training prepared them for the domestic service into which most would go.

The figure, dressed in the blue uniform that gave the School its name, is carrying two objects, a bible and a penny coin. These signify the parting gift given to each girl on leaving.

The original carving is now in the Carisbrooke Castle Museum as it had become very weather worn. The present replacement was carved by Norman Gaches, a local craftsman.

Rob Marshall

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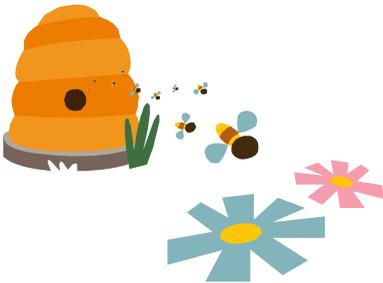
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Question

How many female varroa fit onto a pin head?

The picture shows a pinhead next to two varroa (dorsal and ventral), using Helicon Stacking Measurement, using eyepiece micrometer fitted to a compound microscope.

Area of pinhead = 3 141 592 sq μ m (sq microns)

Area of f.Varroa = 1 425 682 sq μ m

Answer = 2.2 Varroa

Ian King



Voices from the past—free to a Good Home

Over the years the beekeeping fraternity has produced a number of publications featuring its activities. Older members will remember the British Bee Journal (BBJ) and Beecraft which now seem to have been superseded by the glossy and comprehensive BBKA News. All of course some years before the birth of our own Wight Bee.

About a hundred years ago there must have been magazines devoted to apiculture and to which the beekeepers of the day regularly submitted photos of their own apiaries. A Mr W.G.Colenut who lived in Bonchurch was an avid collector of these photos and two scrapbooks that he compiled, each containing hundreds of pictures, were given to me a long time ago. Some pictures show hive inspections taking place, usually without any form of protective clothing. The two books are an insight into many aspects of beekeeping life in the past and depict the variety of hives in use and the size of some personal apiaries.

Also, in my ninetieth year I have been turning out sheaves of papers stored in my beekeeping files. A big envelope containing bits of his father's correspondence was sent to me by John Roberts some years ago. In my early days of beekeeping the standard reference books were those written by R.O.B, Manley. Running hundreds of hives and producing over eighty tons of honey a year he could claim to speak with some authority. He was in regular correspondence with Douglas Roberts on the Island, discussing the problems that commercial beekeepers in those days were facing. Surprisingly one of the big expenses mentioned is the cost of Fumagillin which was found necessary to combat the ravages of Nosema. Manley spent £400 on it one year and this at a time when his honey was selling at 3/6d(70p) a pound. Another plague mentioned and which no longer troubles us to the same degree was accarine and its treatment with Frow mixture. The problems with queen introduction are also discussed.

The two books from Mr Colenut and correspondence with Douglas Roberts need to be disposed of but it seems a shame to dispose of these echoes of past. Is there a volunteer out there who could act as custodian?. It occurred to me that they might be of interest to one of today's hobbyists. If you are interested give me a ring on 721201

Rob Marshall

The Bee Garden

www.bee-garden.co.uk



The Bee Garden has moved to Cowes

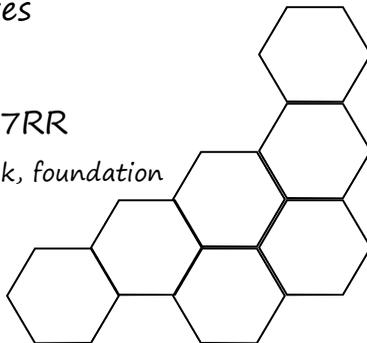
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Storm report from Dave Cassell

My disasters started on the evening of the 23rd December when I had a call from a farmer at 10:30 pm to say that at least 2 of my hives had been blown, stands and all, into a stream about 2 metres from their original site. One had been pulled out by his wife but the other was beyond help.

At first light Christmas Eve. my wife and I went and recovered the hive which still had live bees. The other was a sorry state with bees drowned. When I got home at around 10 am I had another call to say that at least 5 more hives and stands were over at my Newport site. As Pat had an appointment Christine kindly offered to help. We re-aligned and set up the 5 hives and dug the stands further into the ground. We were just about to leave when Christine had a call to tell her that 4 of her hives in Ryde were on the ground so we went and reset those as well.

In all my years of beekeeping I have never had a hive blown down. As all were secured to the stands it was a surprise to see them all flat on the ground still tied together.

The good news is that I inspected the fallen hives on the second week of January and all damaged hives still had live bees with a dry interior.

IWBKA Honey Labels
Number 13
Ruth & Michael Green

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227g

We have been lucky enough to have a graphic designer in the family who has patiently and skilfully assisted us with a number of projects. It has always been important for us to have a recognisable design that would be associated with the farm, so the honey labels tie in with those of existing farm products such as our hen and duck eggs.

The generic symbol for all our products is a fresh green grass motif, which is intended to reflect our approach: everything we make is with 100% natural ingredients, and no fertilisers or chemicals.

We wanted to be able to provide a little information about the honey so we opted for a wrap around label. The silhouette images are simple and modern giving a clear indication of what is in the pot.

We have three sizes of round jars 42g, 227g and 454g. Though quite labour -intensive, all have a lid label and an anti-tamper strip but it's well worth it because they do look very appealing. This year if the bees oblige we'd like to try cut comb so may be able to show you our next addition in the Autumn.